

PATENT ABSTRACTS OF JAPAN

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(54) HEADPHONE WITH CORD WINDING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To prevent a click sound from emitting at an ear at the time of drawing a cord in a headphone equipped with an input cord winding device.

SOLUTION: When an input cord 9 is held by a hand and is drawn in a direction of an arrow A, a reel 1 rotates in a direction opposite to an arrow R1 while the reel 1 resists a recovery force of a coil spring 3 and a pawl 7a of a stopper 7 pressed on a flange 5 outer periphery by an energizing spring 8 is jumping a notch 5a for lock. When the pawl 7a of the stopper 7 falls into a slope side 5c by an energizing force of the energizing spring 8, a buffer material 7c receives the flange 5 which clashes with shock so that a click sound is prevented from being emitted.

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**CLAIMS**

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[Claim(s)]

[Claim 1] Input code and the rolling-up means energized so that it might prepare in a housing and said input code might be rolled round in said housing, A ratchet means to permit the cash drawer from said housing of said input code while said rolling-up means is interlocked with and preventing rolling up of said input code of said rolling-up means, A discharge means to cancel inhibition of input code rolling up by said rolling-up means of said ratchet means, The headphone with a code take-up motion characterized by having a buffer means to reduce the sound generated by the intermittent contact between the members of said ratchet means at the time of the drawer from said housing of said input code.

[Claim 2] Input code and the rolling-up means energized so that it might prepare in a housing and said input code might be rolled round in said housing, A ratchet means to permit the cash drawer from the housing of said input code while said rolling-up means is interlocked with and preventing rolling up of said input code of said rolling-up means, The headphone with a code take-up motion characterized by having a

discharge means to cancel inhibition of input code rolling up by said rolling-up means of said ratchet means, and the ratchet discharge means which makes said ratchet means non-actuation at the time of the drawer from said housing of said input code.

[Claim 3] The headphone [ equipped with the inhibition means which makes a discharge means non-actuation in the condition with which it can equip for listening ] with a code take-up motion according to claim 1 or 2.

[Claim 4] Input code and the rolling-up means energized so that it might prepare in a housing and said input code might be rolled round in said housing, A ratchet means to permit the cash drawer from said housing of said input code while said rolling-up means is interlocked with and preventing rolling up of said input code of said rolling-up means, The headphone with a code take-up motion characterized by having a discharge means to cancel inhibition of input code rolling up by said rolling-up means of said ratchet means, and the discharge inhibition means which makes said discharge means non-actuation in the condition with which it can equip for listening.

[Claim 5] The headphone with a code take-up motion according to claim 3 or 4 characterized by constituting so that the control unit which constitutes said discharge means may be arranged in the location covered with the arm section of the head strap in the condition with which it can equip for listening and actuation of it may become impossible in the condition concerned .

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the headphone to which the input code take-up motion which rolls round input code was attached.

[0002]

[Description of the Prior Art] the increment in the portable audio equipment heard by headphone in recent years not using a loudspeaker -- following -- as headphone -- inner -- disagreeable -- what is inserted and used into the ear pinna called type or an inside phone, and the thing made to contact a head from on the ear pinna called a large-scale truncated form or a lug cover form are used. Input code for all to input a sound signal from audio equipment is required, and receipt of input code had become a technical problem in use of headphone. Therefore, the case where input code is held is used or what formed the code take-up motion in the headphone and audio equipment side is used.

[0003] The perspective view of the important section is shown in drawing 8 at the sectional view of the headphone with a code take-up motion of the conventional

truncated form, and drawing 9 , and the appearance explanatory view at the time of the use is shown in drawing 10 . In drawing 8 , the external auditory meatus of human being's lug is countered at anterior part housing 10c of the headphone housing 10, 10d of anterior part puncturing is prepared, and the loudspeaker unit 21 is attached towards 10d of this anterior part puncturing. Moreover, while the year pad 22 which covered the front face of sponge with the elastic synthetic-resin leather etc. is attached around the front of 10d of anterior part housings and contacting the temporal region softly, the ear-pinna circumference is covered and a sound leak and invasion of the surrounding noise are prevented. The take-up motion substrate 23 is attached in the point of stanchion 10e prolonged from anterior part housing 10c in the direction which keeps away from back, i.e., a lug, to one, it stands erect in this take-up motion substrate 23, and a pivot 2 is attached in it for a reel 1 at this pivot 2, enabling free rotation. Coil spring stowage 1c divided into the opposite side of the code sag section is prepared in code rolling-up section 1a which rolls round input code 9 spirally to a reel 1, this code rolling-up section 1a, divided code sag section 1b, and the core of a reel 1. Input code 9 is wound for going into code rolling-up section 1a, after the end was electrically connected to terminal area 21a of a loudspeaker unit 21 with soldering etc., going into code sag section 1b from hole 23a prepared in the take-up motion substrate 23, being loosely wound in the shape of a whorl several times here, penetrating the reel 1 interior further and being fixed to a reel 1 in this part. A housing 10 covers these from the posterior part of a take-up motion, code cash-drawer hole 10a which pulls out input code 9 caudad is prepared, and plug 9a linked to audio equipment is attached at the tip of the input code 9 pulled out from here.

[0004] Thus, in the headphone 51 for the lugs of another side to which the headphone 50 for one ear to which the code take-up motion was attached are constituted, and a code take-up motion is not attached, like drawing 10 , although not illustrated with a head strap 52, the input code connected electrically connects with the headphone 51 for the lugs of another side, and the headphone of a truncated form are constituted.

[0005] In drawing 9 , the reel 1 is attached in the pivot 2 free [ rotation ] at the core. And it is energized in the arrow-head R1 direction of clockwise by the coil spring 3 which the end fixed to the pivot 2 and the other end fixed to the coil spring stowage 1c inside of a reel 1. Infeed 5a for a lock carries out integer division into equal parts of the perimeter, and is prepared in one 5 of the flanges 4 and 5 of the both sides of a reel 1, it is energized by the clockwise arrow-head R 2-way with the energization spring 8 which applied the end to the stopper 7 and applied the other end to the substrate or the housing so that a stopper's 7 click 7a supported to revolve by the shaft 6 free [ rotation ] might carry out press insertion at infeed 5a of a flange 5, and the so-called ratchet mechanism is made. Release button 7b is prepared in the other end of a stopper's 7 click 7a.

[0006] It is constituted as mentioned above and the actuation is explained below. When elongating in order to connect with the audio equipment which does not illustrate input code 9, it pulls in the direction of arrow-head A with input code 9. Then, a reel 1 rotates to an arrow head R1 and hard flow, i.e., a counterclockwise rotation, while resisting the stability of a coil spring 3, and while a stopper's 7 click 7a currently pressed by flange 5 periphery with the energization spring 8 jumps over gentle slope side 5b of infeed 5a for a lock. If hauling of a code 9 is stopped in the part of arbitration, according to the stability of a coil spring 3, a reel 1 is packed, when it rotates in the arrow-head R1 direction and a stopper 7 rotates to an arrow-head R 2-way with the energization spring 8, and 7a will eat into steep incline side 5c of infeed 5a for a lock, and it will stop.

[0007] If a stopper's 7 release button 7b is pressed when it is going to contain input code 9, click 7a is wide opened from steep incline side of infeed 5a of flange 5 5c, and according to the stability of a coil spring 3, a reel 1 will rotate in the arrow-head R1 direction, and will roll round input code 9.

[0008]

[Problem(s) to be Solved by the Invention] Since a stopper's 7 click 7a is pressed by flange 5 periphery of a reel 1 with the energization spring 8 when elongating input code 9 in the above-mentioned process, when jumping over infeed 5a for a lock, it falls in steep incline side 5c, a flange 5 contacts a stopper 7, and a click is generated. However, since the code take-up motion is formed in the interior of the headphone housing 10, direct close will come to a lug, and this click will become considerable sound volume, and will turn into unpleasant noise.

[0009] Moreover, when containing input code 9 and release button 7b was pressed, the reel 1 also had a possibility that it might go into an eye or plug 9a might be injured in a user's face in vigor \*\*\*, in order to rotate with sufficient vigor in the arrow-head R1 direction and to roll round input code 9 quickly according to the stability of a coil spring 3.

[0010] This invention tends to solve the technical problem of these former, tends to offer the headphone with a code take-up motion which the mechanical noise does not worry even if it elongates input code during headphone wearing, and tends to offer the headphone with a code take-up motion which prevent the risk at the time of input code receipt by making receipt of input code impossible during wearing further.

[0011]

[Means for Solving the Problem] In order to attain the above-mentioned purpose the headphone with a code take-up motion of this invention The rolling-up means energized so that it might prepare input code and in a housing in claim 1 and said input code might be rolled round in said housing, A ratchet means to permit the cash drawer from said housing of said input code while said rolling-up means is interlocked with and preventing rolling up of said input code of said rolling-up means, It is the

configuration equipped with a discharge means to cancel inhibition of input code rolling up by said rolling-up means of said ratchet means, and a buffer means to reduce the sound generated by the intermittent contact between the members of said ratchet means at the time of the drawer from said housing of said input code.

[0012] Operation that the click generated when pulling out input code and both the members of a ratchet means contact intermittently by this configuration can be reduced with a buffer means is acquired.

[0013] Moreover, the rolling-up means energized so that it might prepare input code and in a housing in claim 2 and said input code might be rolled round in said housing. A ratchet means to permit the cash drawer from the housing of said input code while said rolling-up means is interlocked with and preventing rolling up of said input code of said rolling-up means, It is the configuration equipped with a discharge means to cancel inhibition of input code rolling up by said rolling-up means of said ratchet means, and the ratchet discharge means which makes said ratchet means non-actuation at the time of the drawer from said housing of said input code.

[0014] When this configuration draws out input code, a ratchet means will be made into non-actuation with a ratchet discharge means, and it will act so that the click by both the members of a ratchet means contacting intermittently may not be generated.

[0015] Moreover, are the configuration of having added the inhibition means which makes a discharge means non-actuation in the condition with which it can equip for listening to the configuration of claims 1 or 2 in claim 3, and it sets to claim 4 further. Input code and the rolling-up means energized so that it might prepare in a housing and said input code might be rolled round in said housing, It is the configuration equipped with a ratchet means to permit the cash drawer from said housing of said input code while said rolling-up means is interlocked with and preventing rolling up of said input code of said rolling-up means, and the inhibition means which makes said discharge means non-actuation in the condition with which it can equip for listening.

[0016] When headphone are the configurations with which a head can be equipped by these configurations, it prevents from rolling round input code in a housing with an inhibition means, and it acts so that vigor \*\*\*\*\* input code or a plug may not do harm to the body by rolling up under wearing.

[0017] Moreover, in claim 5, in said claims 3 and 4, the control unit which constitutes a discharge means is arranged in the location covered with the arm section of the head strap in the condition with which it can equip for listening, and it constitutes so that actuation may become impossible in the condition concerned.

[0018] In the condition of having equipped by this configuration for listening, by the arm section of a head strap, the control unit of a discharge means itself cannot be operated, and it becomes, without it seeming that it is going to operate it by mistake.

[0019]

[Embodiment of the Invention] Based on a drawing, 1 operation gestalt of the

headphone with a code take-up motion of this invention is explained below.

(Gestalt 1 of operation) Similarly the perspective view, drawing 2 , and drawing 3 which drawing 1 fractures the important section of the headphone with a code take-up motion of the gestalt 1 of operation of this invention, and are shown are an important section sectional view for the explanation of operation.

[0020] In drawing 1 – drawing 3 , the reel 1 is attached in the pivot 2 free [ rotation ] at the core. And an end fixes to a pivot 2, and it is energized in the arrow-head R1 direction by the coil spring 3 which the other end fixed to the coil spring stowage 1c inside of a reel 1, and rolls round, and the means is constituted. Infeed 5a for a lock carries out integer division into equal parts of the perimeter, more than one are prepared in one 5 of the flanges 4 and 5 of the both sides of a reel 1, and the stopper 7 concerned is energized by the arrow-head R 2-way with the energization spring 8 which applied the end to the stopper 7 and applied the other end to the substrate or the housing so that a stopper's 7 click 7a supported to revolve by the shaft 6 free [ rotation ] might carry out press insertion at infeed 5a of a flange 5. Click 7a engages with gentle slope side 5b in the direction R3 in which the relation between infeed 5a and click 7a pulls out input code 9, easily, click 7a separates from infeed 5a, and click 7a constitutes the ratchet means locked by engaging with steep incline side 5c in the direction which rolls round input code 9. Release button 7b used as the control unit of discharge is prepared in the other end of a stopper's 7 click 7a.

[0021] It is wound around code rolling-up section 1a of the back reel 1 by which the end was connected to input terminal 21a of a loudspeaker unit 21, and input code 9 was once fixed to the reel 1 like conventional drawing 8 , and is pulled out, and plug 9a linked to audio equipment is attached in the other end. These parts are contained by the housing 10 interior, input code 9 is pulled out from code outlet 10a of a housing 10, and a stopper's 7 release button 7b is exposed from puncturing 10b like drawing 2 . The configuration others were indicated to be to drawing 8 is altogether applied similarly in this operation gestalt.

[0022] A different point from drawing 9 in the conventional headphone with a code take-up motion is a point of having the buffer means with which it was made for shock absorbing material 7c to contact, before a stopper 7 and a flange 5 contact, although shock absorbing material 7c using materials, such as elastic rubber and synthetic resin, is fixed at the root of a stopper's 7 click 7a, a stopper's 7 click 7a is pressed in the flange 5 direction with the energization spring 8 and it falls in infeed 5a.

[0023] About the headphone constituted as mentioned above, the actuation is explained below. When elongating in order to connect with the audio equipment which does not illustrate input code 9, it pulls in the direction of arrow-head A with input code 9. Then, a reel 1 rotates in the arrow-head R3 direction, while resisting the stability of a coil spring 3, and while a stopper's 7 click 7a currently pressed by flange 5 periphery with the energization spring 8 jumps over infeed 5a for a lock like drawing

2 (a). If hauling of a code 9 is stopped in the part of arbitration, according to the stability of a coil spring 3, a reel 1 is packed, when it rotates in the arrow-head R1 direction and a stopper 7 rotates to an arrow-head R 2-way with the energization spring 8, and 7a will eat into steep incline side 5c of infeed 5a for a lock, and it will stop. [0024] When a stopper's 7 click 7a jumps over infeed 5a for a lock at this time, shock absorbing material 7c catches and buffers that put when click 7a falls in steep incline side 5c according to the energization force of the energization spring 8, and either 7a or the stopper 7 collides with a flange 5 shockingly like drawing 2 (b). When click 7a jumps over infeed 5a of a flange 5 conventionally by this, the click which the flange 5 contacted the stopper 7 intermittently and had been generated can be reduced.

[0025] If the actuation when containing input code 9 presses a stopper's 7 release button 7b, click 7a is wide opened from steep incline side of infeed 5a of flange 5 5c, and according to the stability of a coil spring 3, a reel 1 will rotate in the arrow-head R1 direction, and will roll round input code 9.

[0026] In the gestalt of this operation Thus, the rubber of elasticity [ root / of a stopper's 7 click 7a ], Fix shock absorbing material 7c using materials, such as synthetic resin, and it considers as a buffer means. Although a stopper's 7 click 7a is pressed in the flange 5 direction with the energization spring 8 at the time of expanding of input code 9 and it falls in infeed 5a, before a stopper 7 and a flange 5 contact, generating of a click can be reduced when shock absorbing material 7c contacts.

[0027] In addition, the configuration of shock absorbing material 7c is good also as a configuration in which stopper 7 the very thing does not contact a flange 5, as shown in shock absorbing material 7 of 7d [ of shock absorbing material of drawing 3 (a) ], and drawing 3 (b) e. Moreover, what is necessary is for the backlash when stopping a cash drawer to decrease so that there is many infeed 5a of a ratchet mechanism, but to take the side into consideration and just to determine, since vibration of the stopper 7 at the time of a drawer increases and the effectiveness of shock absorbing material is also influenced. Furthermore, although the flange 5 of a reel 1 was used for the ratchet gear with the gestalt of this operation, it may prepare in the external surface of a flange 5, or a reel 1 may be another member, and a ratchet gear should just be interlocked with a reel 1.

[0028] (Gestalt 2 of operation) Drawing 4 is the important section sectional view of the headphone with a code take-up motion of the gestalt 2 of operation of this invention. Since the configuration of a reel 11 or pivot 12 grade is similar and the rolling-up direction of a reel 11 has only changed to the thing of the gestalt 1 of operation of drawing 2 , duplicating illustration and explanation are omitted. In drawing 4 (a), the reel 11 shall be energized in the arrow-head R4 direction of a regular Fig. within a housing 20 by the coil spring which omitted illustration. A flange is in both sides like the thing of drawing 2 , and since it is a sectional view, only one's of these 15



is shown in the reel 11. Infeed 15a for a lock carries out integer division into equal parts of the perimeter at a flange 15, more than one are prepared, and it is energized in the arrow-head R5 direction with the energization spring 18 which applied the end to the stopper 17 and applied the other end to the housing 20 so that a stopper's 17 click 17a supported to revolve free [ rotation ] at the shaft 16 might carry out press insertion at infeed 15a of a flange 15. It has exposed from hole 20b which release button 17b was prepared in the opposite side other end about the shaft 16 of a stopper's 17 click 17a, and was prepared in the housing 20.

[0029] Fitting of the rotation of roller 17d is made free to pivot 17c which stood erect for the stopper 17 further from a stopper's 17 click 17a at the tip side, and input code 9 is pulled out from code cash-drawer hole 20a of a housing 20, contacting this roller 17d. Thus, when roller 17d engages with input code 9, a ratchet discharge means to cancel actuation of the ratchet means which is relation by gentle slope side 15b of click 17a and infeed 15a of a flange 15 and steep incline side 15c is constituted. If pivot 17c is little fricative quality of the material and a fricative configuration, roller 17d is also omissible.

[0030] In the above configurations, the actuation is explained below. When elongating in order to connect with the audio equipment which does not illustrate input code 9, it pulls in the direction of arrow-head B with input code 9. Then, since the reel 11 is energized in the direction to which lengthen input code 9 and it is not made to come out according to the stability of the coil spring which is not illustrated By the synthetic vector of the energization force and the hauling force to a code, to roller 17d Therefore, for a stopper 17, the rotation force of arrow-head R6 direction arises, as the dashed line showed, separate from click 17a from infeed 15a for the lock of a flange 15, and the equilibrium condition of this force has been maintained. That is, it lets out input code 9 like drawing 4 (b) from the reel 11 which rotates in the arrow-head R8 direction, with click 17a separated. And the press to roller 17d is lost, a stopper 17 rotates in the arrow-head R7 direction with the energization spring 18, if hauling of a code 9 is stopped in the part of arbitration, in this condition, according to the stability of a coil spring, a reel 11 will rotate in the arrow-head R4 direction, and click 17a will eat into steep incline side 15c of infeed 15a for a lock, and it will stop.

[0031] Thus, since click 17a shifts from infeed 15a by contacting roller 17d when pulling out input code 9, a stopper's 17 click 17a and infeed 15a of a flange 15 do not fit in mutually, and a click is not generated in the drawer of input code 9.

[0032] If a stopper's 17 release button 17b is pressed when containing input code 9, click 17a is wide opened from steep incline side of infeed 15a of flange 15 15c, and according to the stability of a coil spring, a reel 11 will rotate in the arrow-head R4 direction, and will roll round input code 9.

[0033] Thus, since that made free fitting of the rotation of roller 17d of in the gestalt of this operation to pivot 17c which stood erect for the stopper 17 at the extended tip

of a stopper's 17 click 17a was prepared and it considered as the ratchet discharge means A stopper's 17 click 17a is pressed by the energization spring 18 in the flange 15 direction at the time of expanding of input code 9, and the condition of having fallen to infeed 15a and carrying out the \*\*\*\* lock is made to cancel. While pulling out input code 9 then, click 17a does not fall in infeed 15a of a flange 15, and a click is not made like before between them.

[0034] (Gestalt 3 of operation) The important section explanatory view of the headphone with a code take-up motion of the gestalt 3 of operation of this invention and drawing 6 are the same, and drawing 5 is the explanatory view of the code receipt propriety actuation. The gestalt of this operation explains only a different part on the basis of the configuration of the gestalt 1 of operation. In drawing 5 (a), the stop member 27 and the discharge member 28 are supported to revolve by the shaft 6 free [ rotation ], and click 27a of the stop member 27 carries out press insertion at infeed 5a of a flange 5. At the root of click 27a, shock absorbing material 27b of the quality of the material of elastic rubber, synthetic resin, etc. has fixed like drawing 1 and 2. engagement section 27c prepares in the opposite side of click 27a to the shaft 6 of the stop member 27 -- having -- this engagement section 27c -- a part of discharge member 28 -- 28a contacts and the energization spring 29 is \*\*\*\*(ed) between engagement section 27c and the discharge member 28. Moreover, it is energized in the arrow-head R9 direction with the energization spring 8 which applied the end to the stop member 27 and applied the other end to the substrate or the housing like drawing 1 . And release button 28b prepared in the edge of the discharge member 28 which engaged with the stop member 27 by engagement section 27c carries out the same operation as release button 7b in drawing 1 . And according to rotation, it does not intervene in inhibition section 28c of the discharge member 28, or things constitute an inhibition means so that the inhibition member 21 may rotate in an arrow head R10 or the R11 direction centering on a shaft 22 and may explain by drawing 6 .

[0035] In drawing 6 , although the headphone 30 for one ear to which the code take-up motion including a configuration like drawing 5 was attached, and the headphone 31 to which a code take-up motion is not attached do not illustrate with a head strap 32, they are connected with the headphone 31 for the lugs of another side by the input code connected electrically, and the headphone of a truncated form are constituted. The bending sections 32a, 32b, and 32c are formed, and, as for a head strap 32, the arm sections 32d and 32e of a head strap 32 are bent in this part in the inner direction. Moreover, the arm sections 32d and 32e of a head strap 32 are connected free [ rotation ] with the rotation shafts 32f and 32g to headphone 30 and 31. And 32f of shafts is interlocked with the shaft 22 of the inhibition member 21 mentioned above.

[0036] Here, the inhibition member 21 is formed in the shape of a cam, and has notch 21a so that more clearly than drawing 6 (b) and (d). And although inhibition section 28c

of release button 28b makes the thrust of the release button 28b concerned prevent in the condition ((b) Fig.) corresponding to the inhibition member 21, inhibition section 28c will be in the condition which can be pressed about release button 28b in the condition ((d) Fig.) corresponding to notch 21a. Moreover, although 32d of arm sections will rotate in the arrow-head R12 direction centering on 32f of shafts as headphone 30 and 31 are extended and it is shown in the (b) Fig. when actually equipping a head from the condition of drawing 6 (a) for listening Even if the 32d of the arm sections concerned rotates to the location shown by the imaginary line, the inhibition member 21 serves as a configuration which fully has a correspondence relation at inhibition section 28c.

[0037] Actuation is explained below. Headphone like drawing 6 (a) in an usable condition and the busy condition which extended headphone 30 and 31 further The inhibition member 21 is in the bottom of the lower part of release button 28b, i.e., inhibition section 28c, like drawing 6 (b). Since it is prevented by the inhibition member 21, 28b does not move and click 27a is not wide opened from steep incline side of infeed 5a of flange 5 5c even if it presses release button 28b, a reel 1 cannot roll round input code 9.

[0038] When headphone are folded up like drawing 6 (c) next, like drawing 6 (d), the lower part of release button 28b, i.e., inhibition section 28c, can respond to notch 21a, the cam section of the inhibition member 21 can press release button 28b, click 27a is wide opened from steep incline side of infeed 5a of flange 5 5c, and a reel 1 rolls round input code 9.

[0039] Although the motion of release button 28b is prevented by the inhibition member 21 when it is going to pull out input code 9 in the (a) Fig. of the usable condition of headphone The energization spring 29 can be resisted like drawing 5 (b), it can rotate in the arrow-head R13 direction, and the stop member 27 can be separated from the discharge member 28, and click 27a is canceled of steep incline side of infeed 5a of flange 5 5c, and it can pull out input code 9 like the gestalt 1 of operation. Drawing 5 (c) and (d) show the independent configurations of the stop member 27 and the discharge member 28, respectively.

[0040] Thus, the inhibition member interlocked with the rotation to the headphone of a foldable head strap in the gestalt of this operation is prepared, and a vigor complementary can prevent risk of a code, a plug, etc. being equivalent to the face by having prevented receipt of the code in the condition of having equipped the head at the time of code receipt by preventing receipt of input code by the usable condition and busy condition of headphone by this inhibition member.

[0041] In addition, it is effective even if it combines with the conventional headphone with a code take-up motion possible [ also combining the configuration of the gestalt 3 of operation with the configuration of the gestalt 2 of operation ].

[0042] (Gestalt 4 of operation) Drawing 7 is the rear view in the condition of having

folded up the head strap, in the headphone with a code take-up motion of the gestalt 4 of operation. In this drawing, 40 and 41 are headphone, a head strap 42 is constituted possible [ folding ] like the operation gestalt 3, and the arm sections 42a and 42b are connected with headphone 40 and 41 free [ rotation ] by each shank 43. The release button 44 as a discharge means for the same code take-up motion as the gestalt of operation mentioned above to be contained by one headphone 40, and for a code 9 to have come be pulled out and made to them, and to cancel inhibition of input code rolling up by the rolling-up means is formed.

[0043] Here, the release button 44 is arranged corresponding to the location which corresponds after arm section 42a of a head strap 42 has equipped the head with headphone for listening. Namely, it is extended in the case of use, and arm section 42a rotates in the arrow-head R14 direction, in the state of wearing, it will be in the condition which shows by the imaginary line, and a release button 44 will be [ a release button 44 will be covered by the arm section 42a concerned to a head, and ] in the condition which cannot be operated from the folding condition shown in drawing 7 to it.

[0044] Thus, according to the gestalt 4 of operation, in the condition of having equipped for listening, the control unit of a discharge means itself cannot be operated, and it becomes by the arm section of a head strap, without it seeming that it is going to operate it by mistake.

[0045]

[Effect of the Invention] As explained above, the advantageous effectiveness that the headphone with a code take-up motion of this invention can reduce the click generated when the configuration of claim 1 draws out input code and both the members of a ratchet means contact intermittently with a buffer means is acquired.

[0046] Moreover, by the configuration of claim 2, when pulling out input code, a ratchet discharge means is operated, and the advantageous effectiveness that both the members of a ratchet means can be prevented from generating a click intermittently in contact with the time of pulling out input code is acquired.

[0047] When [ at which headphone can equip a head ] it reaches and is in the wearing condition, it prevents from rolling round input code in a housing with an inhibition means by the configuration of claims 3-5, and vigor \*\*\*\*\* input code or a plug can be prevented from furthermore doing harm to the body by rolling up under wearing.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] The perspective view fracturing and showing the important section of the headphone with a code take-up motion of the gestalt 1 of operation of this invention

[Drawing 2] \*\*\*\*\* -- the important section sectional view for explanation of operation

[Drawing 3] The important section sectional view showing the modification of the same section

[Drawing 4] The important section sectional view of the headphone with a code take-up motion of the gestalt 2 of this operation

[Drawing 5] The important section explanatory view of the headphone with a code take-up motion of the gestalt 3 of this operation

[Drawing 6] \*\*\*\*\* -- the explanatory view of code receipt propriety actuation

[Drawing 7] Rear view of the folding condition of the headphone with a code take-up motion of the gestalt 4 of this operation

[Drawing 8] The sectional view of the headphone with a code take-up motion of the conventional truncated form

[Drawing 9] \*\*\*\*\* -- the perspective view of an important section

[Drawing 10] The appearance explanatory view at the time of this use

[Description of Notations]

1 11 Reel

2 12 Pivot

3 Coil Spring

5 15 Flange

5a, 15a Infeed

5b, 15b Gentle slope side

5c, 15c Steep incline side

6 16 Shaft

7 17 Stopper

7a, 17a, 27a Click

7b, 17b, 28 Release button

7c Buffer means

9 Input Code

10 20 Housing

21 Inhibition Member

27 Stop Member

28 Discharge Member